

THE MILWAUKEE JOURNAL

INSIGHT

Sunday February 11, 1979

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INSIGHT

February 11, 1979

SUNDAY MAGAZINE OF THE MILWAUKEE JOURNAL

Mike Moore, Editor

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If you're interested in communicating daily with folks halfway around the world — then ham radio is for you. With the proper equipment, you can bounce messages off the moon to someone in New Zealand or Sweden.

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When you're standing in front of a class of squirming eighth graders, you quickly grow thankful that each day isn't Valentine's Day.

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There are certain advantages to 20 year old suits and 14 year old TV sets. At least they hold together, which is saying a lot in today's Recall Society.

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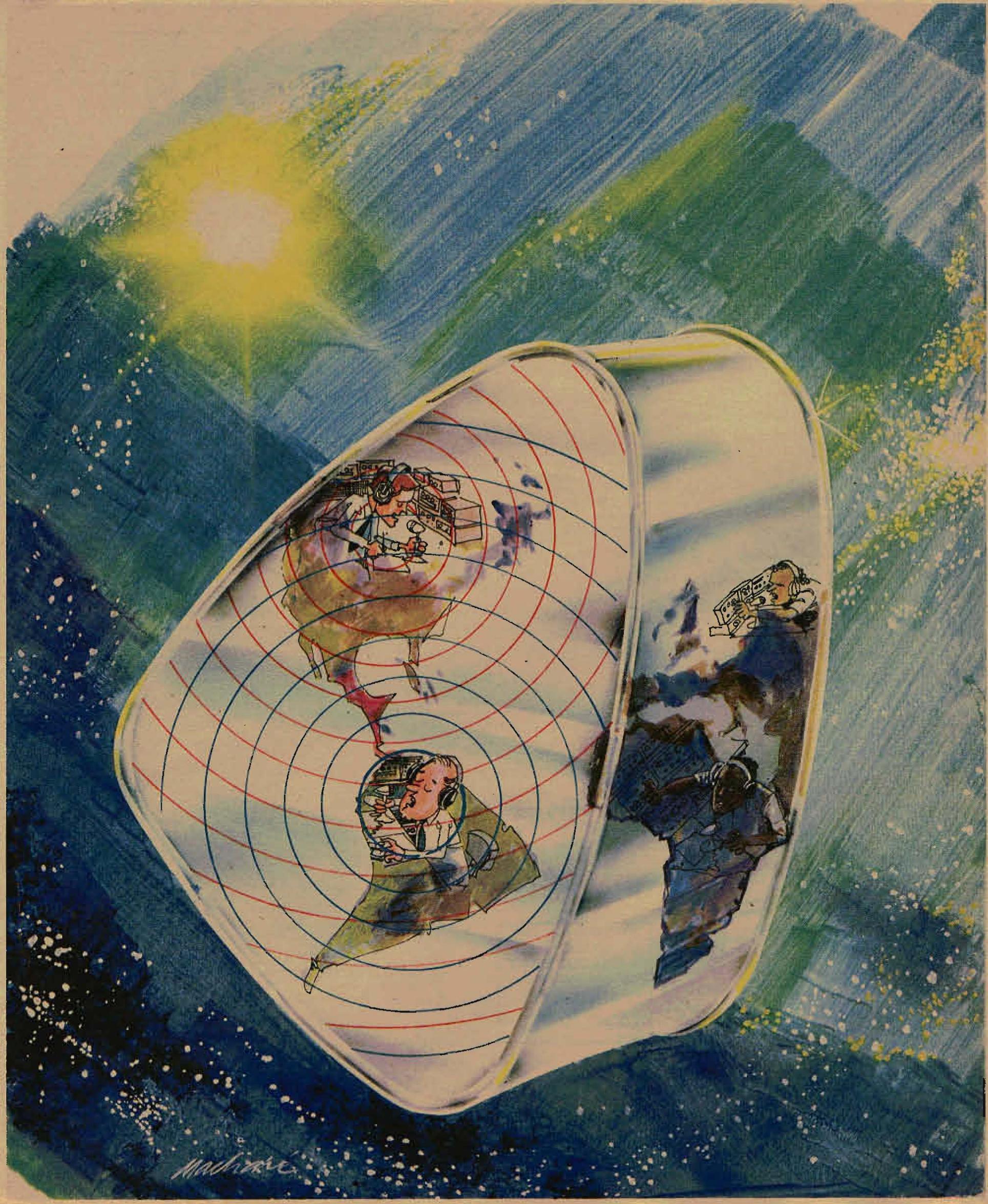
On the cover

There are virtually no limits to the communication capabilities of ham radio operators as this illustration by Luis Machare of The Journal and the story on page 4 indicate.

Break it out tonight.

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The limitless world of HAM RADIO

By Harry S. Pease of *Insight*

SHORTLY after World War II the United States Army Signal Corps made a bit of technological history by reflecting a radio beam off the moon and detecting the echo. Government spokesmen and newspaper writers speculated that signals from the moon might some day guide missiles or spaceships.

One small group saw possibilities for long distance, low power communications. They were radio amateurs.

Such musings were right in character. Commercial radio depends on brute force to saturate a reception area. The amateurs, limited by law to a single kilowatt of transmitter power and squeezed into narrow frequency bands that were considered useless a couple of generations ago, stay alert for new ways to extend their reach.

The moon took awhile. Not until last summer did the "moonbouncers" hold their first contest, in which almost 100 amateurs all over the world took part.

A Venezuelan won individual honors, making contact with 26 other stations by way of the moon in a single weekend. With several operators working shifts, an American station managed 39 exchanges and talked to all the world's continents.

In a sense, moonbouncers are out of date. Four artificial satellites, built by amateurs and launched as lightweight extras on government boosters, orbit the earth and serve the radio hobbyists as relay stations in space. Of eight American OSCARs (for Orbiting Satellite Carrying Amateur Radio), two are now working. The other two are Russian. All are open to anybody with the proper license and equipment.

Closer to home, there are countless ground based repeater stations that listen to an amateur transmitter when they hear the proper code and then rebroadcast its message.

If you can do it by radio at all, chances are that hams are into it. They operate radio controlled models and other equipment, build burglar alarms, run radioteletypes, communica-

cate by television. Mostly, though, they talk, talk, talk, by voice or International Morse Code, across town or more than halfway around the world.

You can ponder that last phrase awhile. We'll get back to it.

MORE than 353,000 American men, women and children take pride in calling themselves "hams." Japan is the only country that has more.

The nickname first was applied more than 60 years ago, when everybody in radio was an amateur. Then, as now, there were two schools. One stressed the movement of information, and it included a lot of railroad telegraphers. The other group had more interest in physics and technology.

Listening to the clumsy code some of the theorists pounded out, the telegraphers waxed sarcastic. "What are you sending with — a ham? Try using your fist," they would send. The amateurs adopted the epithet and took the sting out of it.

Their own putdown for the inept comes from telegraph days, too. Rookies who couldn't sense the muted clicks of a sounder in a busy office put the lid of a snuffbox on it for amplification. Now a ham who gets called a "lid" knows his procedure leaves something to be desired.

Nothing will raise a ham's blood pressure as fast as confusing his hobby with Citizens Band — CB — radio. The major differences derive from the fact that the ham knows what he is doing.

CB is limited to five watts of power and crystal controlled to stay exactly in one of 40 channels. Operators must be 18 or over. They get licenses automatically upon payment of a fee. Eight million people have done so.

Under Federal Communications Commission rules, radio amateurs may be any age but they must pass tests on regulations, electronic theory and Morse Code. There are five levels. Each increase in proficiency brings an increase in privileges. High level hams have

considerable freedom to experiment and almost unlimited freedom to communicate over long distances.

CB has turned out to be one of ham radio's most effective recruiting aids, according to the American Radio Relay League. The league, which is to radio what the Amateur Athletic Union is to sports, says lots of CBers get to a point where they want to do more than just talk across town.

LIKE everything else in our technological civilization, amateur radio has become a lot slicker and a lot more expensive. Some hams run rigs that look like hi-fi sets and cost several thousand dollars. Veterans can remember when they went on the air for \$5.

In the Roaring Twenties, the essential elements of a transmitter were a Model T spark coil, a couple of nails for electrodes, a hacksaw blade for a code key and a scavenged length of fence wire for an antenna. To receive, you needed a crystal, a "cat's whisker" wire to tap it and a set of headphones.

Most hams just went on the air, using their initials as call signs. What they did was broadcast static, broken up into dots and dashes. If you did it now, you would wipe out TV and radio reception for blocks, if not miles, around.

Some hams still work wonders with limited budgets, though.

The FCC allows amateur TV in a small part of the UHF band a little below Channel 14. Dale Ulmer of 2429 N. 62nd St. has a standing appointment for a TV chat with a Chicago ham every Sunday morning. His sending and receiving equipment, which delivers commercial quality black and white pictures, cost him about \$250.

Milwaukee's Channel 18 feeds its antenna 50,000 watts of power. Ulmer's station, WA9ZIG, puts out 100. Both use antennas that multiply the effective signal. Ulmer radiates about 5,000 watts, Channel 18, 1,892,000.

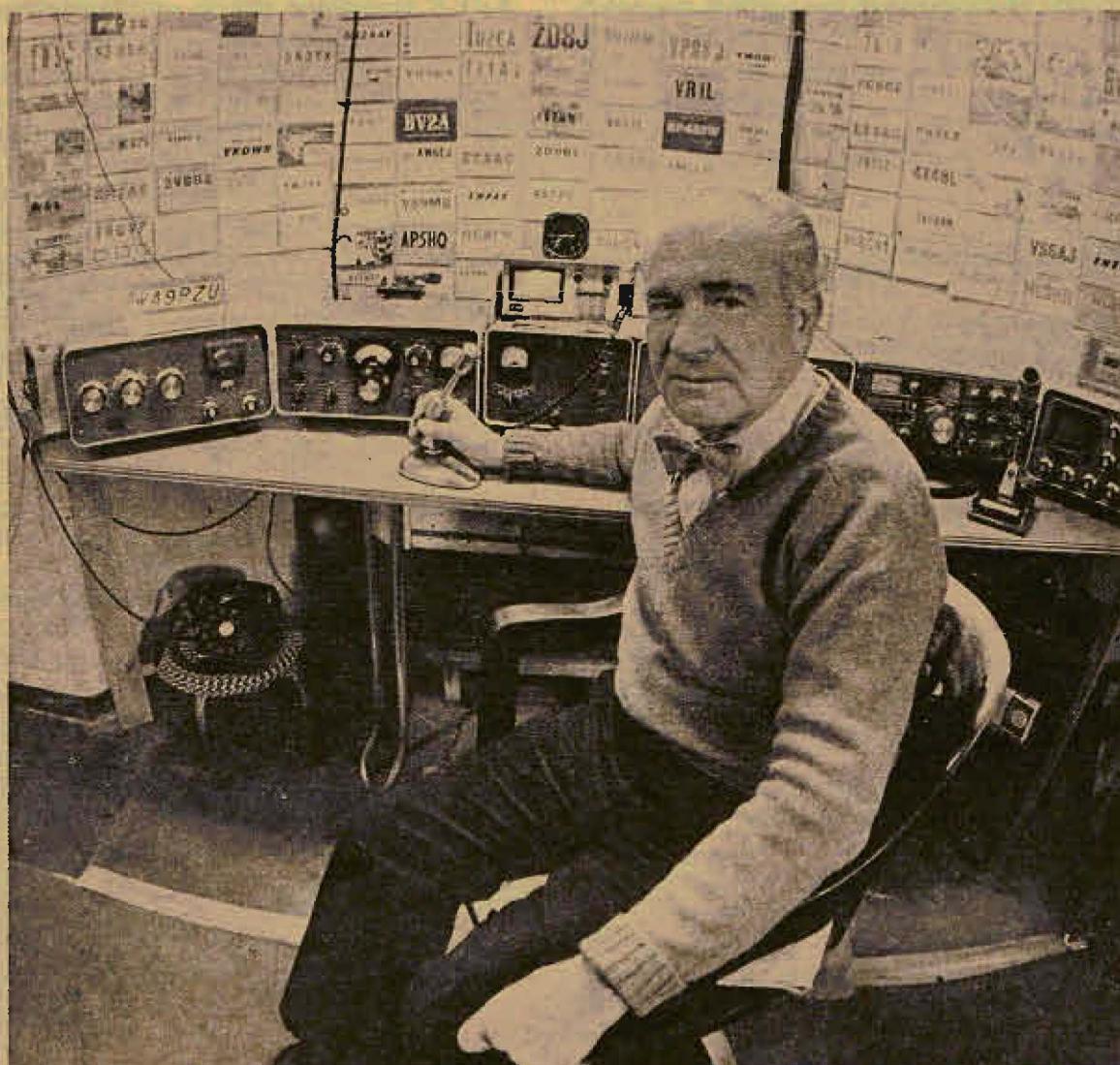
Yet Ulmer works regularly into Peotone, Ill.,

Continued

HAM RADIO



The VHF "Geritol network" links Emmett Koeble with other veteran radio amateurs in the Milwaukee area.



From his basement ham shack, Mel L. Amidzich runs the Milwaukee-Florida net. QSL cards on the wall attest long distance contacts.

40 miles south of Chicago. Using comparable power, his friend Bernard Moores of 1131 Wayland Dr., Oak Creek, has exchanged signals with a ham in Columbus, Ohio, 375 air-line miles away.

A part of the reason commercial stations don't do that kind of thing is their need to reach everybody in their prime areas. Amateurs use directional beams that concentrate all the energy where they want their signals to go.

Ulmer salvaged parts of his transmitter from the two-way radio of a traffic helicopter that crashed in Kansas City. One amplifier tube is a throwaway from a commercial FM transmitter. His monitor is a tube type that was displaced from commercial operation by solid state equipment.

He receives on an ordinary TV to which he added a homemade FM tuner that boosted sensitivity 500 fold for \$5. A professionally built antenna would have cost him about \$200. He made his own from \$7 worth of thin-wall tubing.



A spider web of antennas ties Dwight L. Barr of Lake Geneva to the whole world of amateur radio.

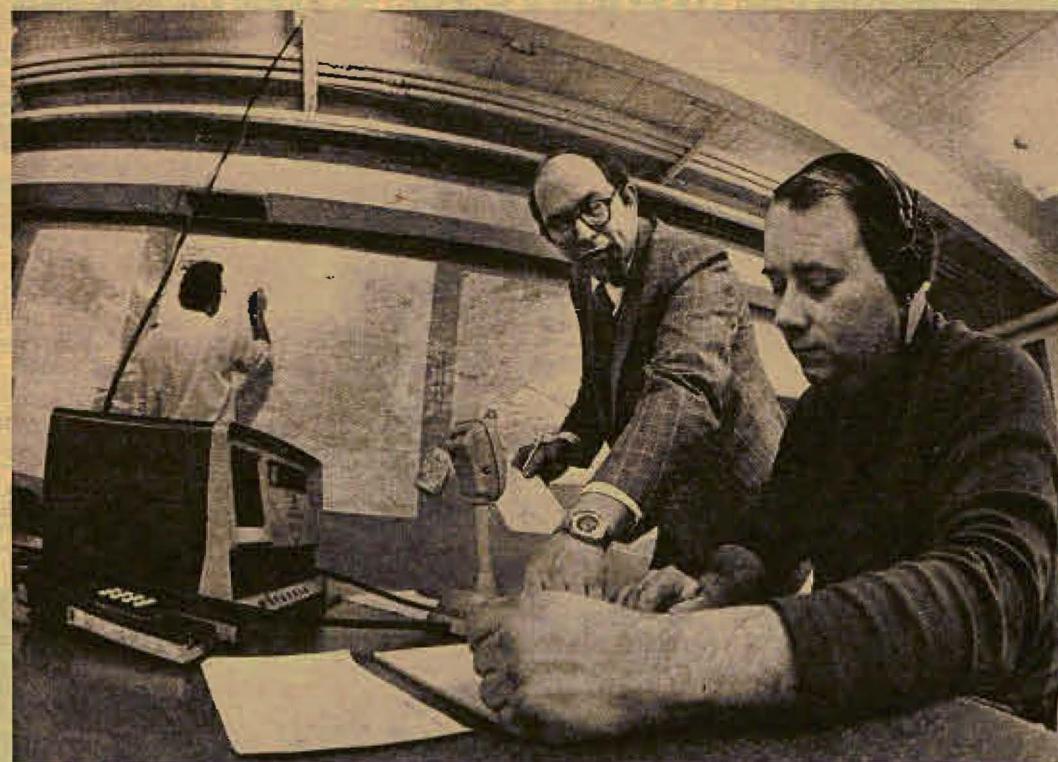
It's not quite fair to say it that way, though. Like many another ham, Ulmer's a pro too. His interest in amateur radio took him into commercial radio engineering, disc jockeying (he used to do the morning program on WEMP) and currently to his own TV sales and service business.

Like commercial television, Ulmer's equipment handles 30 pictures per second, each made up of 525 lines. Other amateurs work with slow scan TV, which takes seven seconds to build up a single picture and puts only 120 lines on the screen. It can't handle motion, but it's great for such things as radio chess games.

Its big advantage is that you just plug a video signal into the microphone jack of a ham radio transmitter and you're on the air.

A half dozen amateurs in the country have received special FCC authority to test a third kind of television, in which full color, full motion video is processed by computer methods before going on the air. It is decoded at the receiver. Working with hams in England, the experimenters hope to achieve trans-Atlantic TV without satellite relay.

SOPHISTICATED amateur projects work in part because the people that carry them forward bring special skills to the task. Moon-bouncers tend to be folks who have access to big dish antennas used for space programs, radio astronomy and other high technology. The ham satellites weren't ginned up in some-



John Leekley (center), coordinator of the local Amateur Radio Emergency Service, and Jack McLeland, his assistant, work from city emergency government headquarters. Dan Gracz, emergency government coordinator, checks maps.

body's basement; the builders already were working for NASA and its contractors.

Some people like that got into amateur radio after they were expert in professional phases of communication. More, probably, had a natural bent for science that led them into hamming at an early age. Their choice of

profession may have been influenced by their radio experience. Nearly all the chief engineers of Milwaukee radio and TV stations are practicing amateurs too.

Ham radio isn't just for electronic wizards, though. The Milwaukee Radio Amateurs' Club roster provides examples.

Thomas R. Gettelman, W9IZO, is a retired brewer. D. Wesley Correll, W9FY, was a vice president of the First Wisconsin National Bank. William F. Grossman, W9EQP, retired as Koehring Co. purchasing agent.

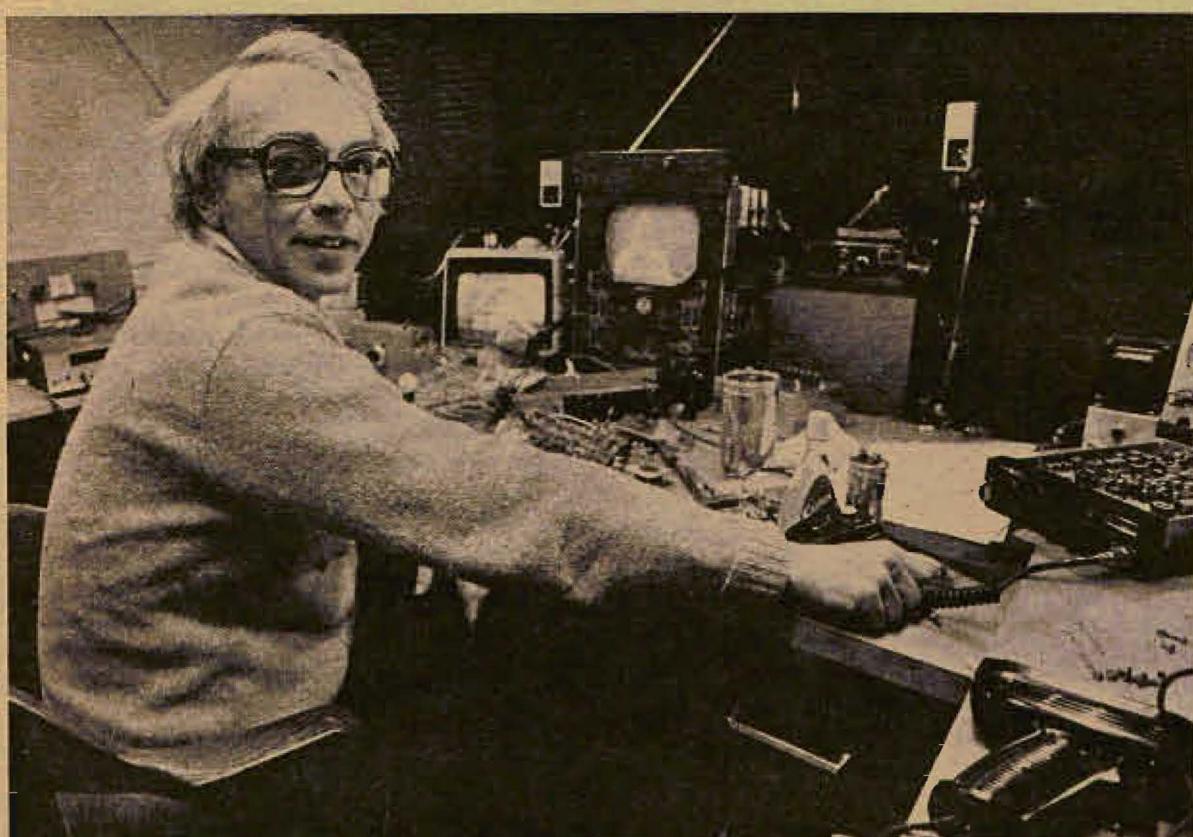
Grossman may well be the best remembered ham in the area. Amateur call signs consist of one or two letters and a number that indicates where they are — W9 is the north central United States — plus identifying letters that may be hard to keep in mind without a memory aid. Grossman is known far and wide as "Eats Quality Peanuts."

Dwight L. Barr, whose handle is "Sparky," is a retired physics teacher in Lake Geneva who works through the satellites. His call, W9KJU, is advertised as "King John's Underwear."

The Milwaukee club, the oldest continuously active one in the world, reached its 60th birthday last year. Its meetings, the third Thursday of most months at 7500 W. State St., Wauwatosa, are part social, part instructional and part administrative.

At least once a year its members run schools for newcomers to the hobby who want to get licenses. (H. Charles Kaetel, whose telephone

Continued



Using home assembled equipment that cost only a few hundred dollars, Dale Ulmer talks via TV with other hams 100 miles away.

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HAM RADIO

number is 781-8616 and who serves the club as director of special promotions, is a bottomless source of information about it.) Although it does not actually run any networks, so many members participate in various ones that a lot of their arrangements are discussed at club meetings.

THE Milwaukee-Florida net convenes daily at 6:30 a.m. Mel L. Amidzich, a retired city health inspector, has presided over it for about 12 years. Some operators live here, some far to the Southeast. Twenty or thirty take part on the average; there have been days when more than 50 reported in on the network.

Among the regulars are Edward Diedrich, W9EWW ("Evil Wicked Witch"), a retired brewery worker who has had two heart operations but still climbs a 100 foot tower to tend his antenna; Keith Doran, a former farm implement dealer who winters in Florida and summers in Antigo; Ralph Kedel, an ex-Milwaukeean who builds roads in Venezuela, and Col. August Saval, KA4M ("Kangaroo and Four Monkeys"), who grew up in Cudahy.

Pet of the net is Sister Mary Mark, VP2LBR ("Little Brown Rabbit"), who serves a hospital operated by the Sisters of the Sorrows Mother on the Caribbean island of St. Lucia. She got a license there after moving from Milwaukee.

At various times other hams have rounded up medicines and supplies for her. She happened to mention on the air during one session that the nuns wanted to build a retreat and recreation house on the island. K4EZD, a retired architect and consulting engineer named Harold Janke who lives in Melbourne, Fla., volunteered to design it for them.

Another confirmed bunch of rag chewers in the Milwaukee area set up the Geritol net in 1966. Operating at very high frequency, the radios communicate only in the local area. Almost all are manned by retirees who have long been hams.

Emmett Koeble, the net controller, holds the call sign K9DD ("Canine Dog-Dog"). He used to work for the telephone company. Bob Hicks was a Milwaukee Road assistant division superintendent. Ray Ploetch (Brookfield Ray) sold and installed bars and bowling alleys. Ray Weeks (Shorewood Ray) retired from Delco Electronics after working on Apollo moon flight guidance equipment.

On the day I visited, Koeble opened up promptly at 9 a.m. and, with a bow to professional radio, announced that he had "Bob and two Rays."

MOST of the talk on amateur networks is just banter among convivial people. In an emergency, operations can become serious in an instant. All the mechanics of message exchange are rehearsed automatically when

Continued

HAM RADIO

hams chat, so they're ready when wireless communication becomes essential.

A couple of systems are serious all the time. One, called MARS for Military Amateur Radio Service, carries messages between servicemen and home folks. Most bases have ham stations, and most MARS operators have "phone patch" setups so they can hook a telephone to their transmitters and receivers.

A lonely soldier who wants to talk to his wife can get a military ham to broadcast a call. A MARS ham near the soldier's home will patch through to the lady. All it costs is telephone toll, if any, from the receiving station to the home.

Some years ago I saw this system work at the Thule (Greenland) Air Force Base about 800 miles from the North Pole. During the long Arctic night, the ham shack was a popular spot.

More immediately important to Milwaukeeans is a system called ARES, the Amateur Radio Emergency Service. The official Milwaukee area registration is about 150 hams. "Others come out of the woodwork when something happens," said Atty. John Leekley, the coordinator.

Whenever severe weather threatens, one operator goes to the plotting desk at the National Weather Service's Mitchell Field office. Others go to the sheriff's office, the city emergency government office and, if a tornado touchdown is reported in Milwaukee County, to Red Cross headquarters. The rest of the hams just stand by, watching and listening at their radios wherever they may be.

ARES operates on two meters, the shortest range amateur band in common use. To gain full coverage of this county and adjoining ones, it has an automatic repeater atop the First Wisconsin Center. Even a properly tuned walkie-talkie will reach the repeater, and therefore the whole area.

The local net is tied into a statewide one commanded by Sherman Carr in Hartford. It can function in snow and ice storms, windstorms or any other natural or man-made disaster. In a typical year, it is activated about 20 times.

DESPITE all the far-out development and utilitarian virtue of today's ham radio, many amateurs still are fascinated by the fundamental trait of the invention. They can talk — by voice or more often in code — to personal friends in far-off places.

John Scarvaci of 910 E Calumet Rd. in Fox

Point is such a man. A retired printer, he celebrated the golden anniversary of his station, W9GIL, last year.

On one recent day he sat down at his rig at 6:45 p.m. and worked Indiana, Michigan, New York, the Northwest Territories of Canada, Knoxville, Hawaii, Siberia, Yugoslavia, Geneva (Switzerland), Sweden, Wales, Florida and California before going to bed about midnight.

In all, he has talked to 354 countries. The world does not have that many; about 30 have gone out of existence since he started and distant possessions of some are counted as separate entities in radio. The celebrated hams he has exchanged views with include King Hussein of Jordan, Sen. Barry Goldwater, Arthur Godfrey and Alex Dreier.

He was the one who told me about working more than halfway around the world.

At the frequencies hams use, radio waves skip back and forth between the earth's surface and an electrically charged layer of the upper atmosphere. Sometimes the bounce isn't quite right, and Scarvaci has trouble contacting his friend J.B. Elliott in Christchurch, New Zealand.

Scarfaci swings his antenna from west to east. Elliott does the opposite. They send their dots and dashes by way of Spain, Libya and Madagascar.

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